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## Noise Control

### Intrusive Noise Sources

- People
  - Speech
  - Music
  - Entertainment
  - Footfalls
- Mechanical Equipment
  - HVAC
  - Chillers
  - Cooling Towers
  - Pumps
  - Plumbing
- Traffic
  - Cars, Trucks
  - Motorcycles
  - Aircraft, Helicopters
  - Trains
- Weather
  - Thunder
  - Wind
  - Rainfall

### Isolation

- Airborne Sound
  - Large Mass
  - Multiple Leaves
  - Deep Airspaces
  - Cavity Insulation
- Structureborne Sound
  - Flexible Supports
  - Heavy Inertia Bases
  - Underlayments
  - Resilient Channels
  - Deep Airspaces

### Flanking

- Airborne Sound
  - Gaps/Leaks
  - Low Mass Areas
  - Ductwork Crosstalk
- Structureborne Sound
  - Rigid Connections
  - Building Structure
  - Narrow Airspaces
  - Improper Isolators

### Activity Noises

- Talking
- Seating
- Doors
- Equipment
- Cell Phones
- Projectors

### Desirable Sound Sources

- People
  - Speech
  - Music
  - Entertainment

## Room Acoustics

### Absorption

- Thickness
- Backing Airspace
- Surface Impedance
- Distribution

### Dimensions

- Geometry
- Surface Area
- Volume

### Reflection

- Diffuse Reflectors
- Flat Surfaces
- Concave Surfaces

Critical Distance  
Room Constant  
Dist. to Reverb Field

Reverberation Time  
Spaciousness  
"Live/Dead"

Anomalies  
Echoes  
Creep  
Coupled Spaces

Sound Pressure Level  
Appropriateness

Direct/Reverberant Ratio

Aesthetics  
Envelopment  
Running Liveness  
Warmth

Signal/Noise Ratio

Speech Intelligibility  
Speech Privacy

